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REMARKS/ARGUMENTS

Upon entry of the instant amendment, claims 1-6, 8-15 and 28-32 are pending. Claims 7-11 and 16-27 have been cancelled. Claims 1, 4 and 21 have been amended to overcome objections to the claims based on informalities. Claims 1 and 28 have been amended to more particularly point out the applicants invention. It is respectfully submitted that the application is in condition for allowance.

CLAIM OBJECTIONS

Claims 1, 4, 10 and 21 have been objected to based upon informalities as set forth in paragraphs 11 and 12 of the Detailed Action. Claim 10 has been cancelled. As such, the objection with respect to claim 10 is obviated. With respect to claims 1, 4 and 21, these claims are being amended as suggested by the Examiner. Accordingly, this objection should be overcome.

CLAIM REJECTIONS -35 USC § 112

Claims 16-27 have been rejected under 35 USC § 112, second paragraph, for the reasons set forth in paragraph 10 of the Detailed Action. Claims 16-27 have been cancelled. Thus, this rejection is obviated.

CLAIM REJECTIONS - 35 U.S.C. § 102(a)

Claims 1, 7, and 28 have been rejected under 35 USC § 102 (a) as being unpatentable over Thorson US Patent No. 6,101,225 ("Thorson"). Claim 7 has been cancelled. As such, the rejection with respect to claim 7 is obviated. With respect to claims 1 and 28, these claims have been amended to recite modulation by a pseudorandom number. With respect to claims 1 and 28, these claims have been amended to recite modulation and inverse modulation by a pseudorandom number. In order for there to be anticipation, each and every one of the elements must be found in a single reference. The Thorson patent does not disclose modulation and

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inverse modulation by a pseudorandom number. Thus, there is no anticipation. The Examiner is kindly requested to withdraw this rejection.

CLAIM REJECTIONS - 35 U.S.C. § 103

Claims 2, 3 12-14, 29, 30 and 32 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the Thorson patent. It is respectfully submitted that the Examiner has failed to set forth a *prima facie* case of obviousness. In particular, in order to establish a *prima facie* case of obviousness, three criteria must be met as set forth in MPEP § 2143.

"First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion to make the claimed combination reasonable expectation of success must both be found in the prior art, not in the Applicant's disclosure."

It is respectfully submitted that with respect to claims 2, 3, 12-14, 29, 30 and 32, the Examiner admits and the Applicant concurs that the Thorson reference does not disclose a PSK modulator, 'an inverse PSK modulator, an M-ary or an inverse M-ary modulator. As such, the third criteria is not met. Moreover, there is simply no suggestion or motivation in the reference to modify the teachings of the references. The Examiner simply states that it would be obvious for one of ordinary skill in the art to use one of the various modulation techniques recited in the claims at issue. However, the Examiner does not indicate why one of ordinary skill would have been motivated to use a phase modular and an inverse phase modulator in which the local oscillator signals are modulated by a pseudorandom number. As set forth in the specification,

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this is done to reduce the power levels of spurious mixer output signals ("spurs"). The Thorson reference nor any of the other references even recognized the problem. For all of the above reasons, the Examiner is respectfully requested to reconsider and withdraw the rejection of these claims.

Claims 15 and 31 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the Thorson patent in view of Scott US Patent No. 5,784,403 ("Scott"). The Thorson reference is discussed above. The Scott reference was cited for disclosing a GMSK modulation technique. It is respectfully submitted that the Examiner has failed to set forth a *prima facie* case. In addition to the reasons set forth above, it is respectfully submitted that the Scott reference does not disclose a configuration for reducing the power level of spurs nor does the Scott reference even address the problem. Finally, it is respectfully submitted that the Examiner has failed to show why one of ordinary skill would be motivated to combine the teachings of the Thorson and Scott references. For these reasons and the above reasons, the Examiner is respectfully requested to reconsider and withdraw this rejection.

Claims 4 and 5 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the Thorson patent in view of Horiguchi et al US Patent No. 6,133,791 ("Horiguchi") and further in view of Underbrink et al US Patent No. 6,754,287 ("Underbrink"). The Thorson reference is discussed above. The Horiguchi reference was cited for disclosing phase modulators, a mixer and a pseudorandom number generator. The Underbrink et al patent was cited for disclosing BPSK modulation.

It is respectfully submitted that the Examiner has failed to set forth a *prima facie* case. In addition to the reasons set forth above, it is respectfully submitted that the Horiguchi reference specifically teaches away from the invention. With reference to Fig. 14 of the Horiguchi reference, the output of the phase modulator 47 is applied to the input of a mixer 48. The phase modulators 43 and 52 are not applied to the mixer 48. The claims at issue require both

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the outputs of the phase modulator and inverse phase modulator be applied to the mixer. It is respectfully submitted that the Examiner has failed to show why one of ordinary skill would be motivated to modify the teachings of the Horiguchi reference and combine them with the teachings of the Thorson and Underbrink references without using the claims as a blueprint, which is not permissible. For these reasons and the above reasons, the Examiner is respectfully requested to reconsider and withdraw this rejection.

Claims 6, 8 and 9 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the Thorson patent in view of Koslov et al US Patent No. 6,052,701 ("Koslov")¹. Claims 8 and 9 have been cancelled. Thus, the rejection is obviated with respect to those claims. With respect to claim 6, the Thorson reference is discussed above. The Koslov reference was cited for disclosing a filter. It is respectfully submitted that the Examiner has failed to set forth a *prima facie* case. In addition to the reasons set forth above, it is respectfully submitted that the Koslov reference does not disclose a configuration for reducing the power level of spurs nor does the Koslov reference even address the problem. Finally, it is respectfully submitted that the Examiner has failed to show why one of ordinary skill would be motivated to combine the teachings of the Thorson and Koslov to solve a problem not addressed by either of the references. Finally, the references do not disclose all of the elements of the claims. Indeed, neither of these references discloses a pseudorandom number generator for modulating a local oscillator signal. For these reasons and the above reasons, the Examiner is respectfully requested to reconsider and withdraw this rejection.

Claims 10 and 11 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the Thorson patent in view of Jacques et al US Patent No. 3,432,758 ("Jacques et al"), Horiguchi and Underbrink references. Claims 10 and 11 have been cancelled. Thus, the

¹ The Applicant assumes that the Examiner is citing Koslov et al US Patent No. 6,052,701 as this reference was not included in the Notice of References Cited by the Examiner and not otherwise identified by number in the Official Action. The Examiner is respectfully requested to add the Koslov reference to the Notice of References Cited.

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rejection is obviated with respect to claims 10 and 11. For all of the above reasons, the Examiner is respectfully requested to reconsider and withdraw the rejection under 35 USC §103.

CONCLUSION

The Examiner is respectfully requested to requested to provide favorable consideration of the pending claims base upon the instant amendment and the remarks above.

Respectfully submitted,

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